

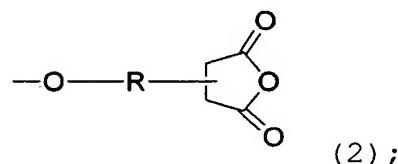
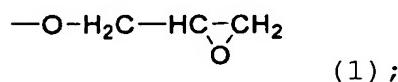
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

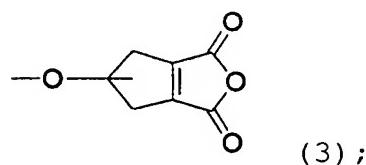
LISTING OF CLAIMS:

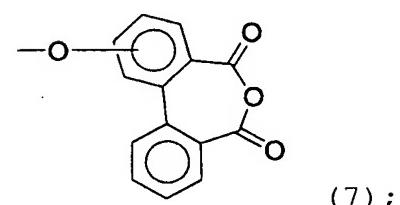
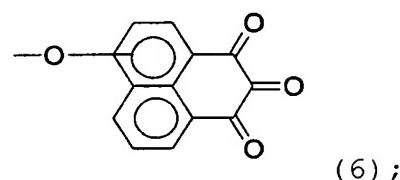
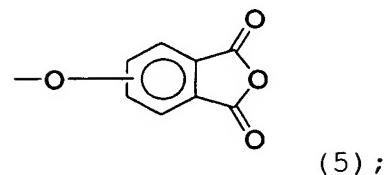
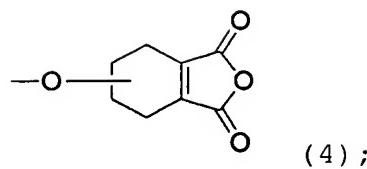
1. (Currently Amended) A method of forming a negative pattern of carbon nanotubes, wherein the method comprises the steps of:

- (a) dispersing carbon nanotubes ~~in an organic solvent with one or more photoacid or photobase generator to provide a liquid coating composition, wherein having surfaces of the carbon nanotubes that are modified with an oxirane group of formula (1) and/or surfaces of the carbon nanotubes are modified with an anhydride group of formula (2), (3), (4), (5), (6) or (7) in an organic solvent comprising one or more photoacid or photobase generator to provide a liquid coating composition:~~



wherein, R is C₁₋₁₅, linear, branched or cyclic alkylene;





- (b) applying the liquid coating composition onto a substrate and evaporating the organic solvent by prebaking to deposit a coating film of said surface-modified carbon nanotubes on the substrate;
- (c) exposing the coating film of said surface-modified carbon nanotubes to UV light through a photomask having a desired pattern to induce photopolymerization of the surface-modified carbon nanotubes in exposed areas of the coating film; and
- (d) developing the exposed coating film of said surface-modified carbon nanotubes with an organic developer to remove unexposed areas of the coating film, resulting in a negative patterned film of said surface-modified carbon nanotubes.

2. (Currently Amended) The method according to claim 1, wherein the liquid coating composition comprises 3-95 wt% of the surface-modified carbon nanotubes and 0.1-15 parts by weight of the photoacid or photobase generator based on 100 parts by weight of the surface-modified carbon nanotubes.

3. (Currently Amended) The method according to claim 1, wherein the liquid coating composition further comprises 0.3-2 parts by weight of a photo intensifier based on 100 parts by weight of the surface-modified carbon nanotubes, wherein the photo intensifier is one or more selected from the group consisting of 2-ethyl-9,10-dimethoxyanthracene, 9,10-dichloroanthracene, 1-chloro-anthracene, 2-methylanthracene, 9-methylanthracene, 2-t-butylanthracene, anthracene, 1,2-benzanthracene, 1,2,3,4-dibenzanthracene, 1,2,5,6-dibenzanthracene, 1,2,7,8-dibenz-anthracene, 9,10- dimethoxydimethylanthracene, 2-ethyl-9,10-dimethoxyanthracene, N-methylphenothiazine, and isopropylthioxanthone.

4. (Original) The method according to claim 1, wherein the organic solvent used in step (a) is one or more selected from the group consisting of DMF, 4-hydroxy-4-methyl-2-pentanone, ethylene glycol monoethyl ether, 2-methoxyethanol, methoxypropylacetate, ethyl-3-ethoxy-propionate, and cyclohexanone.

5. (Currently Amended) The method according to claim 1, wherein the liquid coating composition further comprises 0.1-10 parts by weight of a coupling agent based on 100 parts by weight of the surface-modified carbon nanotubes,

wherein the coupling agent is one or more selected from the group consisting of aminopropyltriethoxysilane, phenylaminopropyltrimethoxysilane, ureidopropyltriethoxysilane, glycidoxypropyltrimethoxysilane, isocyanatopropyltriethoxysilane, isopropyltriisostearoyltitanate, and acetoalkoxyaluminium diisopropylate.

6. (Currently Amended) The method according to claim 1, wherein the liquid coating composition further comprises 1-95 parts by weight of an oxirane group-containing monomer, oligomer or polymer, and/or an anhydride group-containing monomer, oligomer or polymer to 100 parts by weight of the surface-modified carbon nanotubes.

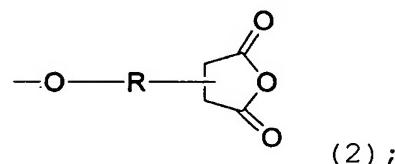
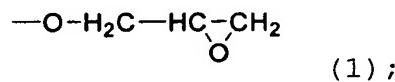
7. (Currently Amended) The method according to claim 1, wherein the liquid coating composition further comprises 1-30 parts by weight of a polymer binder based on 100 parts by weight of the surface-modified carbon nanotubes, wherein the polymer binder is one or more selected from the group consisting of polyester, polycarbonate, polyvinylalcohol, polyvinylbutylal, polyacetal, polyarylate, polyamide, polyamideimide, polyetherimide, polyphenyleneether, polyphenylenesulfide, polyethersulfone, polyetherketone, polyphthalamide, polyethernitrile, polybenzimidazole, polycarbodiimide, polysiloxane, polymethylmethacrylate, polymethacrylamide, nitrile rubber, acryl rubber, polyethylenetetrafluoride, epoxy resin, phenol resin, melamine resin, urea resin, polybutene, polypentene, ethylene-propylene copolymer, ethylene-butene-diene copolymer, polybutadiene, polyisoprene, ethylene-propylene-diene copolymer, butyl rubber, polymethylpentene,

polystyrene, styrene-butadiene copolymer, hydrogenated styrene-butadiene copolymer, hydrogenated polyisoprene, and hydrogenated polybutadiene.

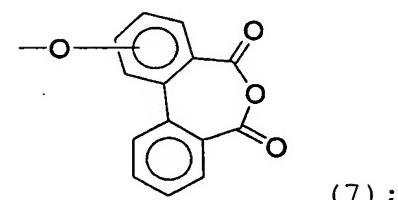
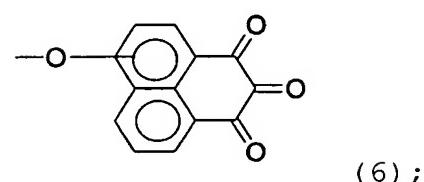
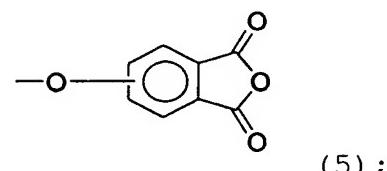
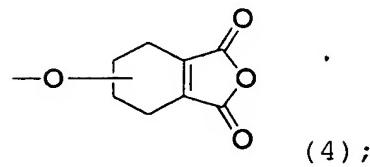
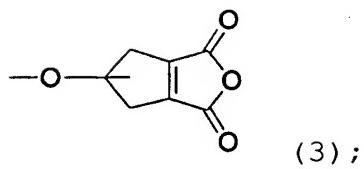
8. (Original) The method according to claim 1, wherein the method further comprises a step of post curing the exposed coating film after step (c).

9. (Currently Amended) A method of producing a polymerized carbon nanotube composite, wherein the method comprises the steps of:

(a) dispersing carbon nanotubes ~~in an organic solvent along with one or more thermal hardener to provide a liquid coating composition, wherein having surfaces of the carbon nanotubes that are modified with an oxirane group of formula (1) and/or surfaces of the carbon nanotubes are modified with an anhydride group of formula (2), (3), (4), (5), (6) or (7) in an organic solvent comprising one or more thermal hardener to provide a liquid coating composition:~~



wherein, R is C₁₋₁₅, linear, branched or cyclic alkylene;



(a)(b) applying the liquid coating composition onto a substrate and heatcuring to provide a polymerized carbon nanotube composite of said surface-modified carbon nanotubes.

10. (Currently Amended) The method according to claim 9, wherein the liquid coating composition comprises 3-95 wt% of the surface-modified carbon nanotubes and 1-35 parts by weight of the thermal hardener based on 100 parts by weight of the surface-modified carbon nanotubes.

11. (Original) The method according to claim 9, wherein the organic solvent used in step (a) is one or more selected from the group consisting of DMF, 4-hydroxy-4-methyl-2-pentanone, ethylene glycol monoethyl ether, 2-methoxyethanol, methoxypropylacetate, ethyl-3-ethoxypropionate, and cyclohexanone.

12. (Currently Amended) The method according to claim 9, wherein the liquid coating composition further comprises 0.1-10 parts by weight of a coupling agent based on 100 parts by weight of the surface-modified carbon nanotubes, wherein the coupling agent is one or more selected from the group consisting of aminopropyltriethoxysilane, phenylaminopropyltrimethoxysilane, ureidopropyltriethoxysilane, glycidoxypropyltrimethoxysilane, isocyanatopropyltriethoxysilane, isopropyltriisostearoyltitanate, and acetoalkoxyaluminium diisopropylate.

13. (Currently Amended) The method according to claim 9, wherein the liquid coating composition further comprises 1-95 parts by weight of an oxirane group-containing monomer, oligomer or polymer, and/or an anhydride group-containing monomer, oligomer or polymer to 100 parts by weight of the surface-modified carbon nanotubes.

14. (Currently Amended) The method according to claim 9, wherein the liquid coating composition further comprises 1-30 parts by weight of a polymer binder based on 100 parts by weight of the surface-modified carbon nanotubes, wherein

the polymer binder is one or more selected from the group consisting of polyester, polycarbonate, polyvinylalcohol, polyvinylbutylal, polyacetal, polyarylate, polyamide, polyamideimide, polyetherimide, polyphenyleneether, polyphenylenesulfide, polyethersulfone, polyetherketone, polyphthalamide, polyethernitrile, polybenzimidazole, polycarbodiimide, polysiloxane, polymethylmethacrylate, polymethacrylamide, nitrile rubber, acryl rubber, polyethylenetetrafluoride, epoxy resin, phenol resin, melamine resin, urea resin, polybutene, polypentene, ethylene-propylene copolymer, ethylene-butene-diene copolymer, polybutadiene, polyisoprene, ethylene-propylene-diene copolymer, butyl rubber, polymethylpentene, polystyrene, styrene-butadiene copolymer, hydrogenated styrene-butadiene copolymer, hydrogenated polyisoprene, and hydrogenated polybutadiene.

15. (Canceled).

16. (Canceled).